

## CLAIMS

What is claimed is:

1. Powder atomizer for an installation for the series coating of workpieces with powdered coating material, with a powder channel leading through the atomizer to a mouth opening, which powder channel is fluidly connected to an external line for supplying the atomizer with a mixture of coating powder and air,
 

where the powder-air mixture flowing through said powder channel and exits from said opening is atomized,

an additional air channel provided, opening at said mouth opening of said powder channel, and from which it is possible to introduce additional air into the path of the mixture exiting from said mouth opening of said powder channel.
2. A powder atomizer according to Claim 1, wherein said additional air channel opens out of an annular slit surrounding said opening end of said powder channel.
3. A powder atomizer according to Claim 1 or 2 with an atomization bell, which rotates during the coating, and being attached to a hollow shaft containing said powder channel and containing a path leading to a spray edge of said atomization bell, through which the powder-air mixture exiting from said powder channel flows, wherein the additional air is led into said path leading to said spray edge.
4. Powder atomizer according to Claim 1, wherein said additional air channel surrounds, in the shape of a ring, said powder channel within said hollow shaft.

5. A method for the series coating of workpieces with a powdered coating material using a powder atomizer with a powder channel leading through the atomizer, in which powder channel a mixture of coating powder and air, which is supplied from an external powder line, flows to a mouth opening, said method includes the steps:

expelling where the powder-air mixture through said powder channel and out of said opening thereby atomizing the powder;

pausing the coating process;

passing clean air supplied to the atomizer from an additional air channel outside the external powder line, into said powder channel or into the path of the gas mixture exiting from the opening of the powder channel.

6. A method for the series coating of workpieces with a powdered coating material using a powder atomizer with a powder channel leading through the atomizer, in which channel a mixture of coating powder and air, supplied from an external powder line, flows to an opening,

where the powder mixture, which flows through the powder channel and which exits from the opening, is atomized, in particular according to Claim 5,

characterized in that, during the coating operation, from an additional air channel, air, which mixes with the mixture introduced through the external powder line, and which is supplied to the atomizer outside the external powder line, is led into the powder channel or into the path of the mixture exiting from the opening of the powder channel.

7. A method according to Claim 5, wherein said step of passing clean air through said additional air channel is further define by introducing air directly at said opening of said powder channel.

8. A method according to Claim 5, wherein said step of passing clean air through said additional air channel is further defined by passing the air into said powder channel of the atomizer, upstream from said opening of said atomizer.

9. A powder paint atomizing assembly comprising:

5 an atomizer;

a powder channel fluidly connected to said atomizer for supplying fluidized powder to said atomizer;

a hollow shaft having said powder channel disposed concentrically therein; and

10 wherein said hollow shaft defines an air channel with said powder channel, said air channel being fluidly connected with a source of pressurized air thereby providing cleaning air for preventing powder from accumulating upon said atomizer.

10. An assembly as set forth in Claim 9 wherein said atomizer defines a  
15 slit channel providing atomizing dispersion of the powder supplied from said fluidizing channel.

11. An assembly as set forth in Claim 10 wherein said air channel is fluidly connected to said slit channel thereby providing impinging air to said slit channel for preventing powder from accumulating in said slit channel.

20 12. An assembly as set forth in Claim 9 wherein said air channel is fluidly connected to said powder channel thereby providing impinging air to said powder channel for preventing powder from accumulating in said powder channel.